

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-17. (Canceled)

18. (Previously Presented) A method of treating a subterranean formation comprising:

providing a first flowing stream comprising at least one coated particulate, wherein the coated particulate comprises a particulate coated with a coating material and wherein the particulate has a size in the range of from 4 to 100 U.S. mesh;

providing a second flowing stream comprising at least one density reducing material comprising polystyrene divinylbenzene;

combining the first flowing stream and the second flowing stream to form a third flowing stream that comprises the first flowing stream, the second flowing stream, and a servicing fluid, wherein the first flowing stream and the second flowing stream are combined and mixed while continuing to flow as a stream;

allowing the density reducing material to adhere to a surface of the coated particulate to create at least one reduced-density, coated particulate in the third flowing stream; and

placing the third flowing stream into the subterranean formation.

19. (Previously Presented) The method of claim 18 wherein the coating material comprises at least one resin composition.

20. (Withdrawn) The method of claim 19 wherein the resin composition comprises at least one hardenable resin component comprising at least one hardenable resin and at least one hardening agent component comprising at least one liquid hardening agent, at least one silane coupling agent, and at least one surfactant.

21. (Withdrawn) The method of claim 19 wherein the resin composition comprises at least one furan-based resin selected from the group consisting of a furfuryl alcohol, a mixture furfuryl alcohol with an aldehyde, a mixture of furan resin and phenolic resin and any combination thereof.

22. (Withdrawn) The method of claim 21 further comprising at least one solvent selected from the group consisting of 2-butoxy ethanol, butyl acetate, furfuryl acetate, and any combination thereof.

23. (Withdrawn) The method of claim 19 wherein the resin composition comprises at least one phenolic-based resin selected from the group consisting of a terpolymer of phenol, a phenolic formaldehyde resin, a mixture of phenolic and furan resin, and any combination thereof.

24. (Withdrawn) The method of claim 23 wherein the resin composition further comprises at least one solvent selected from the group consisting of butyl acetate, butyl lactate, furfuryl acetate, 2-butoxy ethanol, and any combination thereof.

25. (Previously Presented) The method of claim 19 wherein the resin composition comprises at least one high-temperature epoxy-based resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolac resin, polyester resin, glycidyl ethers, and any combination thereof.

26. (Previously Presented) The method of claim 25 wherein the resin composition further comprises at least one solvent selected from the group consisting of dimethyl sulfoxide, dimethyl formamide, dipropylene glycol methyl ether, dipropylene glycol dimethyl ether, dimethyl formamide, diethylene glycol methyl ether, ethylene glycol butyl ether, diethylene glycol butyl ether, propylene carbonate, d-limonene, fatty acid methyl esters, and any combination thereof.

27. (Withdrawn) The method of claim 19 wherein the resin composition comprises at least one phenol/phenol formaldehyde/furfuryl alcohol resin comprising from about 5% to about 30% phenol, from about 40% to about 70% phenol formaldehyde, from about 10 to about 40% furfuryl alcohol, from about 0.1% to about 3% of a silane coupling agent, and from about 1% to about 15% of a surfactant.

28. (Previously Presented) The method of claim 18 wherein the coating material comprises at least one tackifying composition.

29. (Previously Presented) The method of claim 28 wherein the tackifying composition comprises at least one tackifying composition selected from the group consisting of

a polyamide, a polyester, a polycarbonate, a polycarbamate, a natural resin, and any combination thereof.

30. (Withdrawn) The method of claim 18 wherein the density-reducing material comprises micro-material.

31. (Original) The method of claim 18 wherein the density-reducing material comprises low-density material similar in size to the particulate material.

32. (Original) The method of claim 18 wherein the particulate material is coated with the coating material on-the-fly.

33. (Canceled)

34. (Canceled)

35. (Previously Presented) A method of fracturing a subterranean formation comprising:

providing a first flowing stream comprising at least one coated particulate, wherein the coated particulate comprises a particulate coated with a coating material and wherein the particulate has a size in the range of from 4 to 100 U.S. mesh;

providing a second flowing stream comprising at least one density reducing material;

combining the first flowing stream and the second flowing stream to form a third flowing stream that comprises the first flowing stream, the second flowing stream, and a fracturing fluid, wherein the first flowing stream and the second flowing stream are combined and mixed while continuing to flow as a stream;

allowing the density reducing material to adhere to a surface of the coated particulate to create at least one reduced-density, coated particulate in the third flowing stream; and

placing the third flowing stream into the subterranean formation at a pressure sufficient to create at least one fracture therein.

36. (Previously Presented) The method of claim 35 wherein the coating material comprises at least one resin composition.

37. (Withdrawn) The method of claim 36 wherein the resin composition comprises at least one hardenable resin component comprising at least one hardenable resin and at least one hardening agent component comprising at least one liquid hardening agent, at least one silane coupling agent, and at least one surfactant.

38. (Withdrawn) The method of claim 36 wherein the resin composition comprises at least one furan-based resin selected from the group consisting of a furfuryl alcohol, a mixture furfuryl alcohol with an aldehyde, a mixture of furan resin and phenolic resin and any combination thereof.

39. (Withdrawn) The method of claim 38 wherein the resin composition further comprises at least one solvent selected from the group consisting of 2-butoxy ethanol, butyl acetate, furfuryl acetate, and any combination thereof.

40. (Withdrawn) The method of claim 36 wherein the resin composition comprises at least one phenolic-based resin selected from the group consisting of a terpolymer of phenol, a phenolic formaldehyde resin, a mixture of phenolic and furan resin, and any combination thereof.

41. (Withdrawn) The method of claim 40 wherein the resin composition further comprises at least one solvent selected from the group consisting of 2-butoxy ethanol, butyl acetate, furfuryl acetate, and any combination thereof.

42. (Previously Presented) The method of claim 36 wherein the resin composition comprises at least one high-temperature epoxy-based resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolac resin, polyester resin, glycidyl ethers, and any combination thereof.

43. (Previously Presented) The method of claim 42 wherein the resin composition further comprises at least one solvent selected from the group consisting of dimethyl sulfoxide, dimethyl formamide, dipropylene glycol methyl ether, dipropylene glycol dimethyl ether, dimethyl formamide, diethylene glycol methyl ether, ethylene glycol butyl ether, diethylene glycol butyl ether, propylene carbonate, d-limonene, fatty acid methyl esters, and any combination thereof.

44. (Withdrawn) The method of claim 36 wherein the resin composition comprises at least one phenol/phenol formaldehyde/furfuryl alcohol resin comprising from about 5% to about

30% phenol, from about 40% to about 70% phenol formaldehyde, from about 10 to about 40% furfuryl alcohol, from about 0.1% to about 3% of a silane coupling agent, and from about 1% to about 15% of a surfactant.

45. (Previously Presented) The method of claim 35 wherein the coating material comprises at least one tackifying composition.

46. (Previously Presented) The method of claim 45 wherein the tackifying composition comprises at least one tackifying composition selected from the group consisting of a polyamide, a polyester, a polycarbonate, a polycarbamate, a natural resin, and any combination thereof.

47. (Withdrawn) The method of claim 35 wherein the density-reducing material comprises micro-material.

48. (Original) The method of claim 35 wherein the density-reducing material comprises low-density material similar in size to the particulate material.

49. (Original) The method of claim 35 wherein the particulate material is coated with the coating material on-the-fly.

50. (Withdrawn) A method of installing a gravel pack comprising:
providing a first flowing stream comprising at least one coated particulate, wherein the coated particulate comprises a particulate coated with a coating material and wherein the particulate has a size in the range of from 4 to 100 U.S. mesh;

providing a second flowing stream comprising at least one density reducing material;

combining the first flowing stream and the second flowing stream to form a third flowing stream that comprises the first flowing stream, the second flowing stream, and a delivery fluid, wherein the first flowing stream and the second flowing stream are combined and mixed while continuing to flow as a stream;

allowing the density reducing material to adhere to a surface of the coated particulate to create at least one reduced-density, coated particulate in the third flowing stream;
and

introducing the third flowing stream into the well bore so that the at least one reduced-density, coated gravel particulate forms a gravel pack substantially adjacent to the wellbore.

51. (Withdrawn) The method of claim 50 wherein the coating material comprises at least one resin composition.

52. (Withdrawn) The method of claim 51 wherein the resin composition comprises at least one hardenable resin component comprising at least one hardenable resin and at least one hardening agent component comprising at least one liquid hardening agent, at least one silane coupling agent, and at least one surfactant.

53. (Withdrawn) The method of claim 51 wherein the resin composition comprises at least one furan-based resin selected from the group consisting of a furfuryl alcohol, a mixture furfuryl alcohol with an aldehyde, a mixture of furan resin and phenolic resin and any combination thereof.

54. (Withdrawn) The method of claim 53 further comprising at least one solvent selected from the group consisting of 2-butoxy ethanol, butyl acetate, furfuryl acetate, and any combination thereof.

55. (Withdrawn) The method of claim 51 wherein the resin composition comprises at least one phenolic-based resin selected from the group consisting of a terpolymer of phenol, a phenolic formaldehyde resin, a mixture of phenolic and furan resin, and any combination thereof.

56. (Withdrawn) The method of claim 55 wherein the resin composition further comprises at least one solvent selected from the group consisting of butyl acetate, butyl lactate, furfuryl acetate, 2-butoxy ethanol, and any combination thereof.

57. (Withdrawn) The method of claim 51 wherein the resin composition comprises at least one high-temperature epoxy-based resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolac resin, polyester resin, glycidyl ethers, and any combination thereof.

58. (Withdrawn) The method of claim 57 wherein the resin composition further comprises at least one solvent selected from the group consisting of dimethyl sulfoxide, dimethyl formamide, dipropylene glycol methyl ether, dipropylene glycol dimethyl ether, dimethyl

formamide, diethylene glycol methyl ether, ethylene glycol butyl ether, diethylene glycol butyl ether, propylene carbonate, d'limonene, fatty acid methyl esters, and any combination thereof.

59. (Withdrawn) The method of claim 51 wherein the resin composition comprises at least one phenol/phenol formaldehyde/furfuryl alcohol resin comprising from about 5% to about 30% phenol, from about 40% to about 70% phenol formaldehyde, from about 10 to about 40% furfuryl alcohol, from about 0.1% to about 3% of a silane coupling agent, and from about 1% to about 15% of a surfactant.

60. (Withdrawn) The method of claim 50 wherein the coating material comprises at least one tackifying composition.

61. (Withdrawn) The method of claim 60 wherein the tackifying composition comprises at least one tackifying composition selected from the group consisting of a polyamide, a polyester, a polycarbonate, a polycarbamate, a natural resin, and any combination thereof.

62. (Withdrawn) The method of claim 50 wherein the density-reducing material comprises micro-material.

63. (Withdrawn) The method of claim 50 wherein the density-reducing material comprises low-density material similar in size to the particulate material.

64. (Withdrawn) The method of claim 50 wherein the particulate material is coated with the coating material on-the-fly.

65. (Previously Presented) The method of claim 18 wherein the servicing fluid is a fracturing fluid.

66. (Previously Presented) The method of claim 18 wherein placing the third flowing stream into the subterranean formation comprises placing the third flowing fluid into the subterranean formation at a pressure sufficient to create at least one fracture therein.

67. (Withdrawn) The method of claim 18 wherein placing the third flowing stream into the subterranean formation comprises introducing the third flowing stream into the well bore so that the at least one reduced-density, coated particulate forms a gravel pack substantially adjacent to the wellbore.

68. (Previously Presented) A method of treating a subterranean formation comprising:

providing a first flowing stream comprising at least one coated particulate, wherein the coated particulate comprises a particulate coated with a coating material and wherein the particulate has a size in the range of from 4 to 100 U.S. mesh;

providing a second flowing stream comprising at least one density reducing material;

combining the first flowing stream and the second flowing stream to form a third flowing stream that comprises the first flowing stream, the second flowing stream, and a servicing fluid, wherein the first flowing stream and the second flowing stream are combined and mixed while continuing to flow as a stream;

allowing the density reducing material to adhere to a surface of the coated particulate to create at least one reduced-density, coated particulate in the third flowing stream; and

placing the third flowing stream into the subterranean formation.

69. (Previously Presented) The method of claim 68 wherein the servicing fluid is a fracturing fluid.

70. (Previously Presented) The method of claim 68 wherein placing the third flowing stream into the subterranean formation comprises placing the third flowing stream into the subterranean formation at a pressure sufficient to create at least one fracture therein.

71. (Previously Presented) The method of claim 68 wherein the density reducing material comprises polystyrene divinylbenzene.

72. (Previously Presented) The method of claim 68 wherein the coating material comprises at least one resin composition.

73. (Previously Presented) The method of claim 68 wherein the resin composition comprises at least one high-temperature epoxy-based resin selected from the group consisting of bisphenol A-epichlorohydrin resin, polyepoxide resin, novolac resin, polyester resin, glycidyl ethers, and any combination thereof.

74. (Previously Presented) The method of claim 68 wherein the resin composition further comprises at least one solvent selected from the group consisting of dimethyl sulfoxide, dimethyl formamide, dipropylene glycol methyl ether, dipropylene glycol dimethyl ether, dimethyl formamide, diethylene glycol methyl ether, ethylene glycol butyl ether, diethylene

glycol butyl ether, propylene carbonate, d-limonene, fatty acid methyl esters, and any combination thereof.

75. (Previously Presented) The method of claim 68 wherein the coating material comprises at least one tackifying composition.

76. (Previously Presented) The method of claim 75 wherein the tackifying composition comprises at least one tackifying composition selected from the group consisting of a polyamide, a polyester, a polycarbonate, a polycarbamate, a natural resin, and any combination thereof.

77. (Previously Presented) The method of claim 35 wherein the density reducing material comprises polystyrene divinylbenzene.